



# **SP26 1 in 10 Weather Adjustment Methodology**

**Electricity Committee Workshop  
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# Reasons for updating SP26 factor

**Concerns about reserve margin in ISO southern California control area (SP 26) declining**

**Previous adjustment (5.8%) was estimated in 1999 as response to the 1998 west wide heat storm**

**Previous adjustment methodology focused on peak coincident with total WECC**

**A more recent history of loads and temperatures were available for analysis**

**Desire for a more transparent methodology to account for extreme weather events**



# Peak/Temperature Relationship

- Relationship was developed for SCE and SDG&E separately
- 2003 FERC 714 hourly demand data
- NOAA weather data
- Daily Peak: 6/15 - 9/15 weekday afternoons (1-6 p.m.)



# Temperature Definition

**3-day weighted maximum temperature**

$$631\text{max} = .6 (\text{max current day}) + .3 (\text{max day-1}) + .1 (\text{max day-2})$$



# Weather Stations

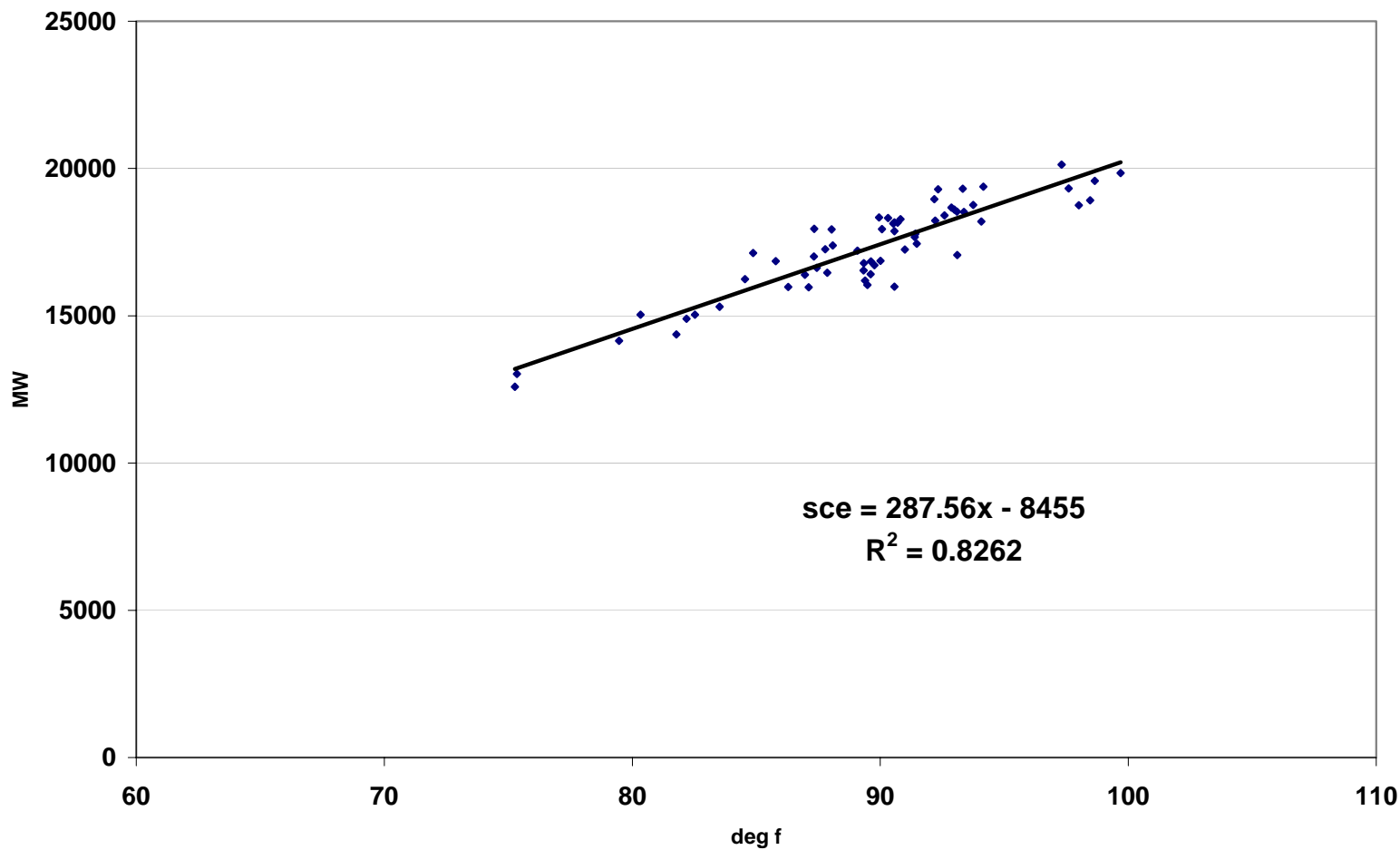
| <b>SDG&amp;E</b>           | <b>SCE</b>            |                           |                               |                                   |
|----------------------------|-----------------------|---------------------------|-------------------------------|-----------------------------------|
| <b>Lindbergh<br/>Field</b> | <b>Fresno<br/>FAT</b> | <b>Long Beach<br/>LGB</b> | <b>Burbank<br/>Pump Plant</b> | <b>Riverside<br/>Fire Station</b> |
| <b>100%</b>                | <b>6.2%</b>           | <b>32.4%</b>              | <b>24.3%</b>                  | <b>37.1%</b>                      |

**Weighting is based on relative residential a/c saturation within service territory.**

**All stations have weather history back to 1950.**



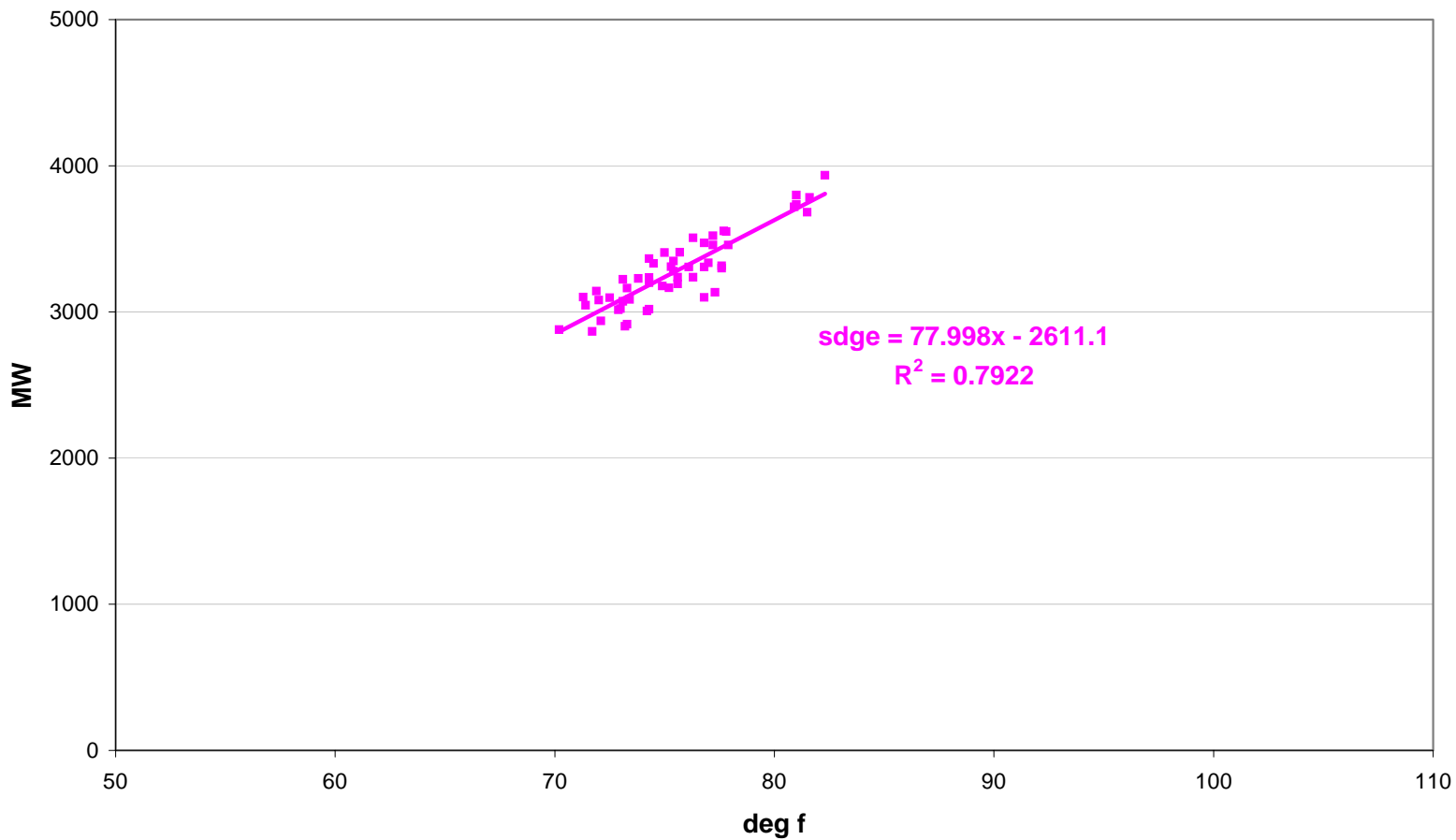
2003 SCE 6/15-9/15 weekday afternoon peaks vs 631 maxtemp



Note: temperatures limited to values over 75 degrees



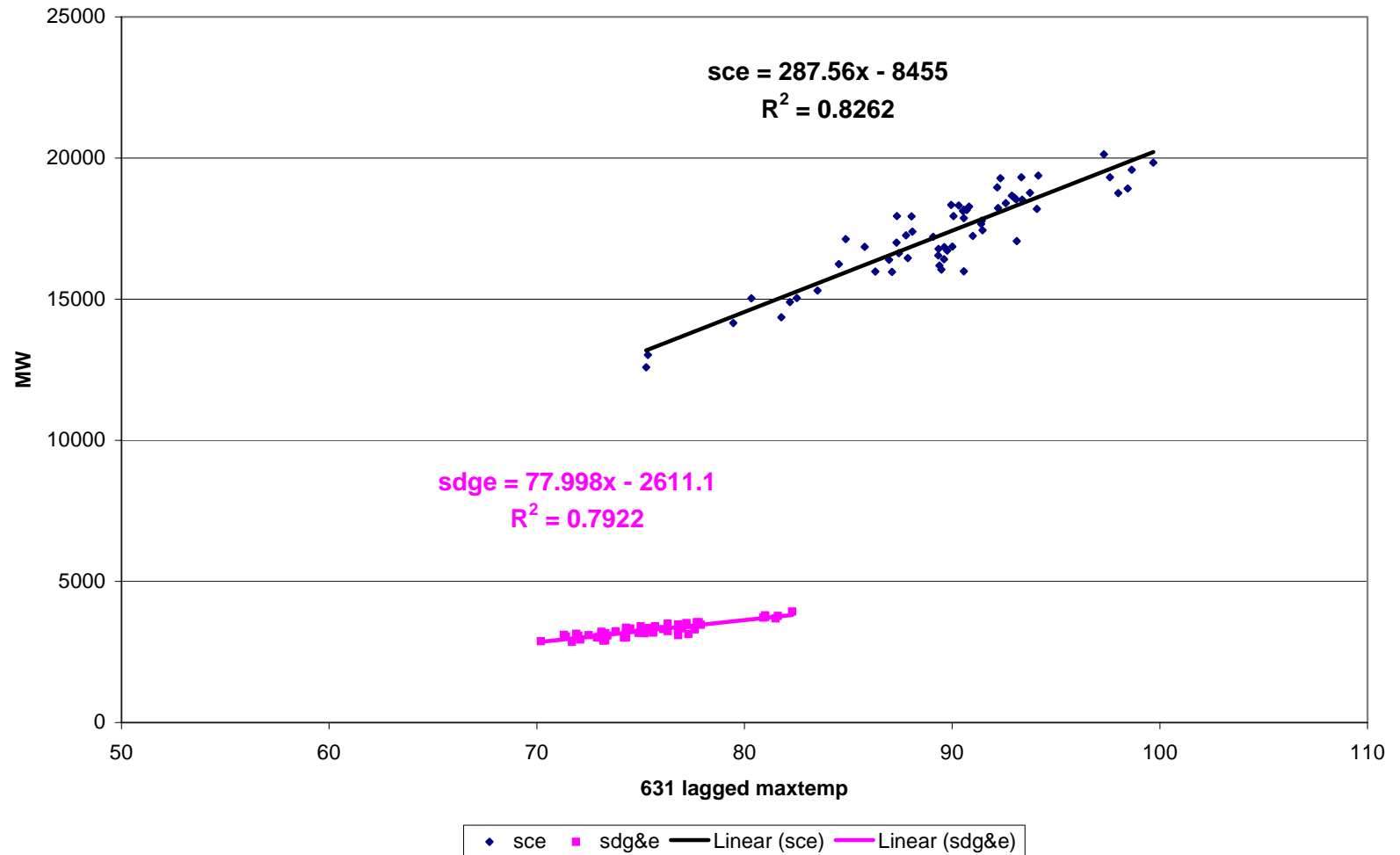
### 2003 SDG&E 6/15-9/15 weekday afternoon peaks vs 631 maxtemp



**Note: temperatures limited to values above 70 degrees**



## 2003 SCE and SDG&E 6/15-9/15 weekday afternoon peaks vs 631 maxtemp





# **Annual Peak Weather Variation**

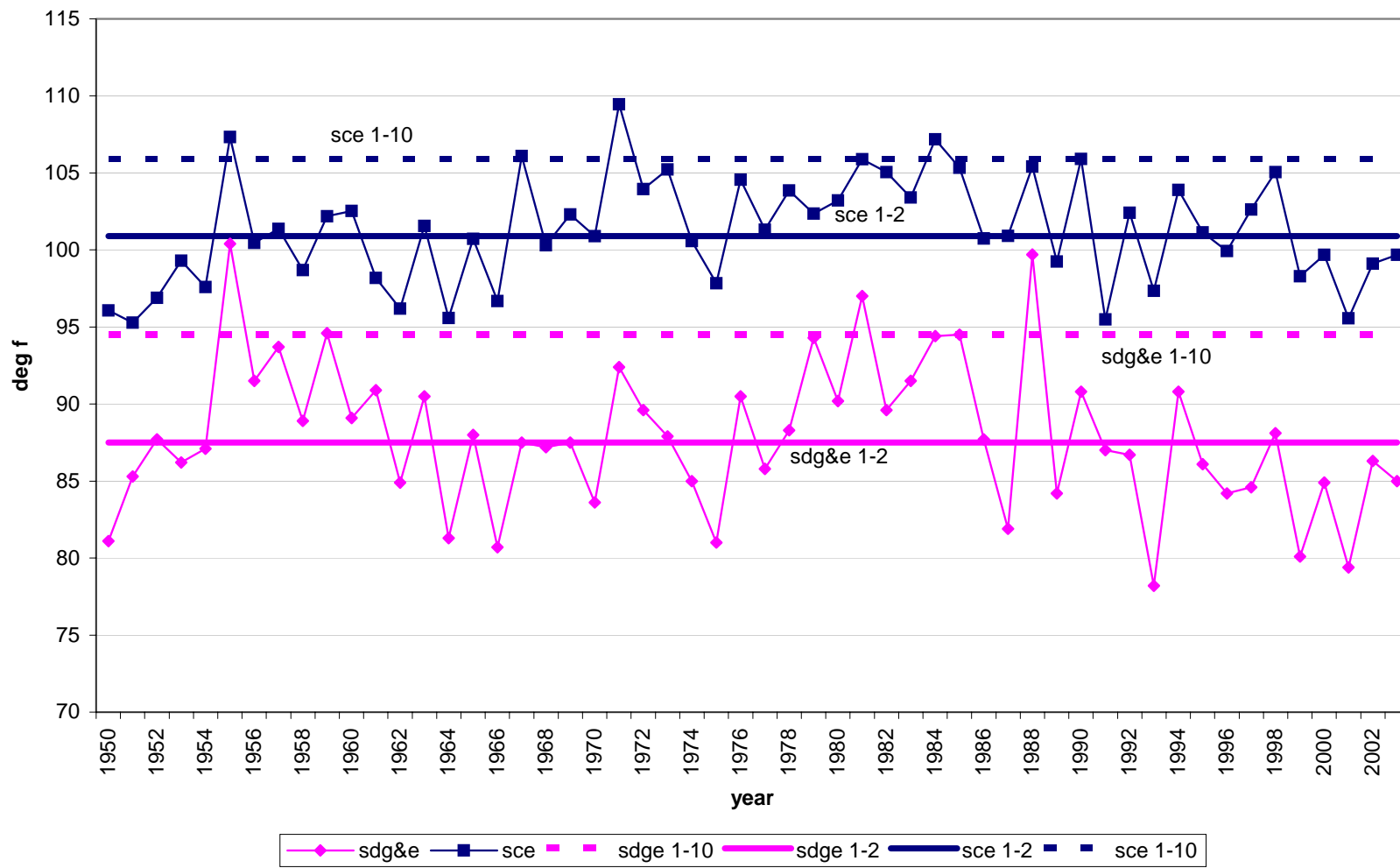
**Daily peak loads were calculated using actual weather (1950-2003) and service area specific equations.**

**Weekend temperatures were included in historic calculations to account for random nature of weather**

**Annual peak for each historic year is assumed to be coincident with highest combined temperature calculations**

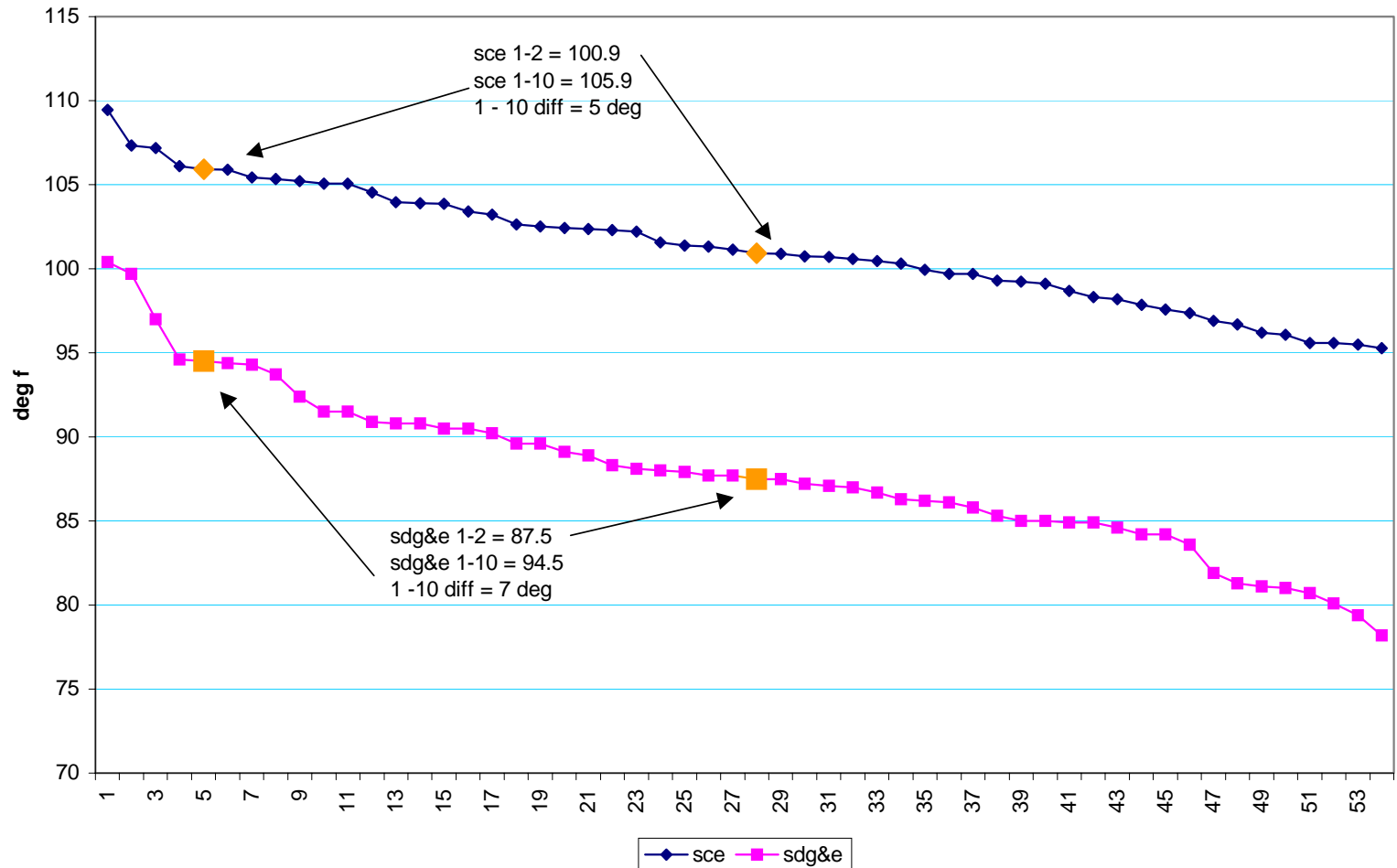


annual maximum 6/15-9/15 temperatures by service area



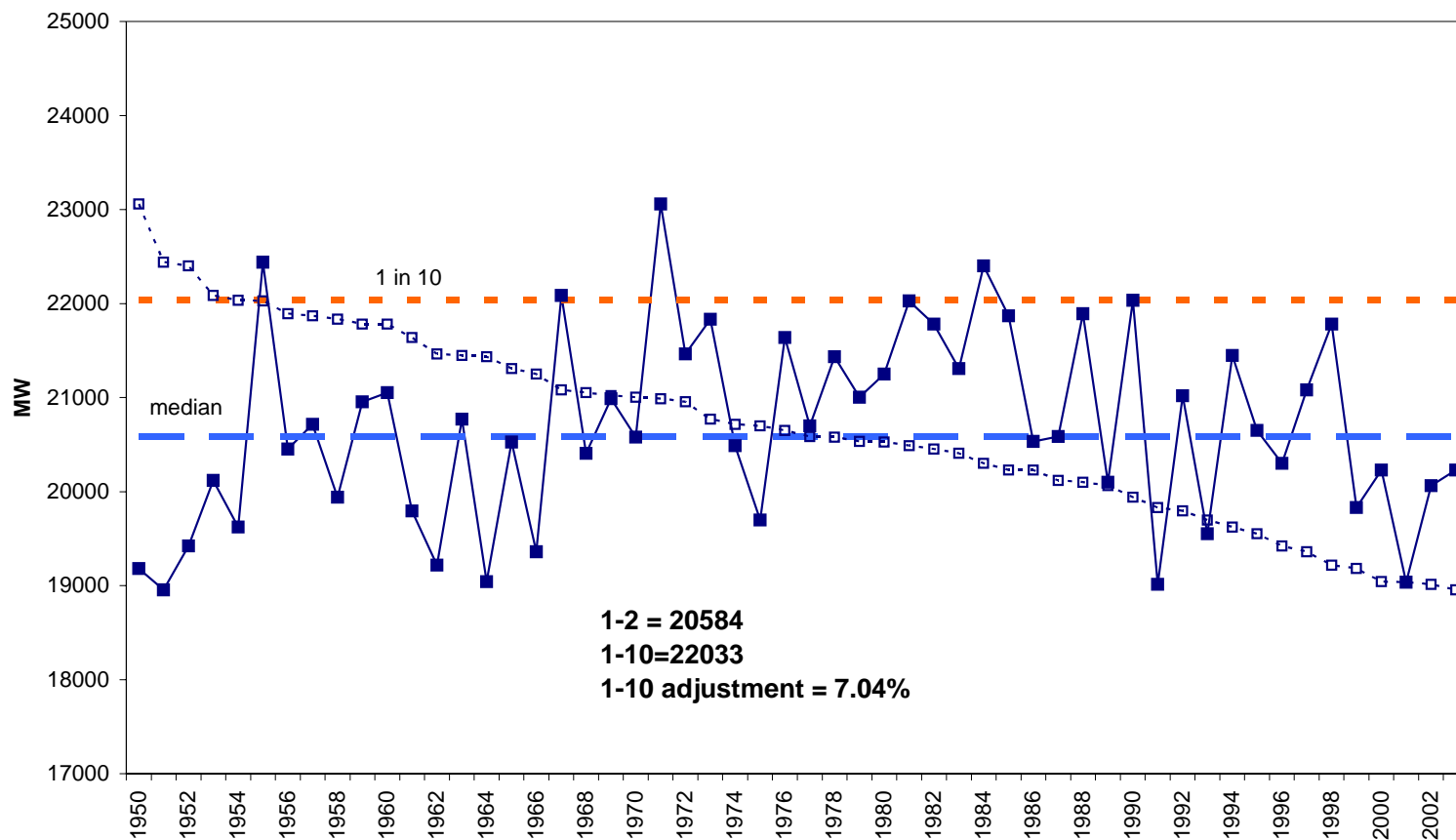


annual maximum 6/15-9/15 temperatures rank ordered by service area



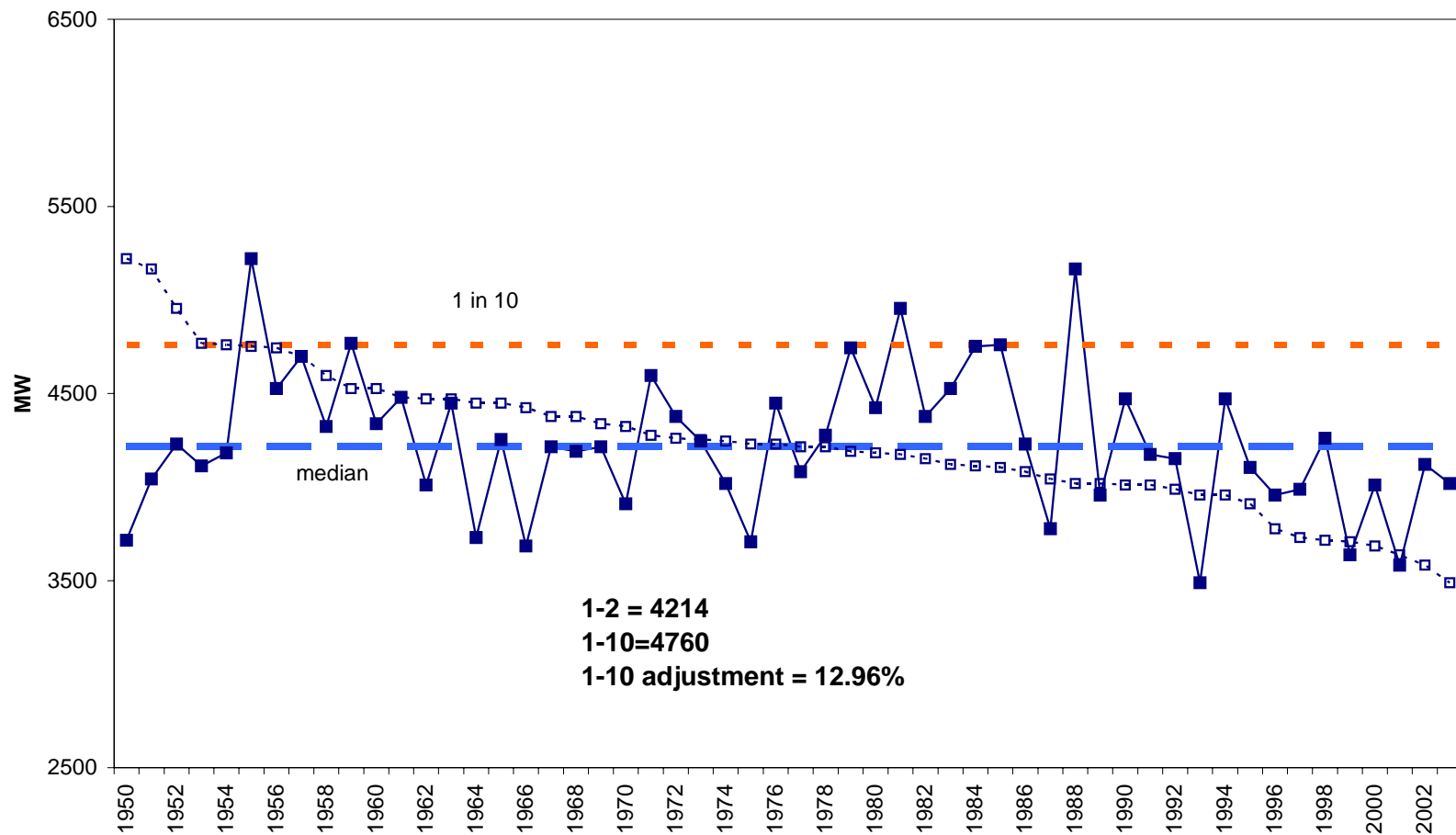


## SCE peak variability based on 1950-2003 weather years and 2003 temperature response





## SDG&E peak variability based on 1950-2003 weather years and 2003 temperature response





## SCE+SDG&E 2003 peak variability based on 1950-2003 weather years

